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INTRA-INDUSTRIAL SPECIALIZATION AND ITS IMPACT ON TRADE AND ECONOMIC CO-OPERATION BETWEEN INDIA AND THE SOCIALIST COUNTRIES OF EASTERN EUROPE

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A. INTRODUCTION AND PLAN OF STUDY

1. The purpose of this study is to examine intra-industrial specialization and economic co-operation between India and the socialist countries of Eastern Europe. The objectives were to examine past results achieved in industrial specialization due to the economic linkages of India with the socialist countries of Eastern Europe, to examine the institutional structure and policy framework in which these results were achieved, and to explore new possibilities of co-operation, and suggest ways of achieving them.

2. Section B summarizes the major findings of the study. Section C explores the broad framework within which a developing economy following a planning system relying on both a public and a private sector, and a developed socialist planned economy, interact. This framework is set within the context of the growth process of the developing and the developed economy. Section D examines in detail the economic inter-linkages of India with the economies of the socialist countries of Eastern Europe. It also compares the economic inter-linkages of the Indian economy with those of the socialist countries of Eastern Europe as a whole and its inter-linkages with the rest of the world. The analysis is conducted within the framework of a 66 sector model of the Indian economy, in order to explore in detail the inter-linkages of trade with economic activity processes. There is also an analysis of the unit prices realized in India's trade with the socialist countries of Eastern Europe and in such trade with other major economies. Section E examines the possibilities of economic co-operation between India and the socialist countries of Eastern Europe during the period of the Fifth Indian Five-Year Plan ending in 1978-1979, and Section F examines the institutional structure within which such trade has been conducted in the past.

B. SUMMARY OF MAJOR FINDINGS

3. Trade between India and the socialist countries of Eastern Europe should be looked at from the viewpoint of the integration of a developing economy, undergoing a process of economic transformation, with developed economies which have completed the initial process of socialist construction and which are developing complex systems to achieve much higher rates of improvement in material standards of living and to solve problems of co-ordination of complex economic sub-systems.

4. The Eastern European economies are by now playing a significant role in the development of the Indian economy and have specialized in providing direct and indirect support through input supplies to equipment, intermediate, and agro-based wage goods sectors of the economy.

5. The rate of growth of India's exports to the Eastern European economies has been high. However, the base of such exports has been in the primary sectors of the Indian economy; the diversification of exports into processed and engineering goods has been weak.

6. India has realized, by and large, favourable unit prices in its trade with the socialist countries of Eastern Europe.

7. The socialist countries of Eastern Europe are now emerging as important trade partners of India.

8. A detailed examination of imports, integrated into the Indian Five-Year Plan model, shows that the relative specialization of the socialist countries of Eastern Europe in the provision of equipment, certain intermediate goods supplying sectors, and agro-based sectors, is expected to continue. It also shows that the Eastern European economies are expected to play a relatively important role in the achievement of the self-sufficiency objectives of Indian planning.

9. Examination of export possibilities suggests that engineering goods sectors, involving a high ratio of skilled and unskilled labour costs, need to be examined closely from the viewpoint of expanding and diversifying Indian exports to the socialist countries of Eastern Europe.

10. A case study of the African economies shows that a prima facie case exists for a closer examination of possibilities of joint ventures in third countries by India and the Eastern European economies.

11. The institution of Joint Commissions to study problems of economic, scientific and technical co-operation is a step in the right direction, since the processes of economic integration between India and the socialist countries of Eastern Europe have now reached a volume and level of maturity such that further development needs detailed planning, within the context of the process of growth of the Indian economy.

C. TRADE AND SPECIALIZATION BETWEEN INDIA AND THE SOCIALIST COUNTRIES OF EASTERN EUROPE

12. The socialist countries of Eastern Europe are industrialized, centrally-planned economies. India, on the other hand, is a poor country, attempting to develop its economy through a process of planning relying on the institutional structure of a mixed economy, namely, the coexistence of public and private sectors. The role that interregional specialization and trade may be expected to play in this context of economies at different levels of development, each adopting planning procedures based on different institutional systems, will be briefly outlined.

13. The influence of socialist planning theory has been strong on the architects of Indian plans. In the earlier period of their development process, both the socialist countries and India have put emphasis on accumulation and the growth of the means of production of investment goods sectors. Thus, according to Mahalanobis, who played a central role in the formulation of India's Second Five-Year Plan, (1955-1960):

> "The proper strategy would be to bring about a rapid development of the industries producing investment goods in the beginning by increasing appreciably the proportion of investment in the basic heavy industries. As the capacity to manufacture both heavy and light machinery and other capital goods increases, the capacity to invest by using home produced capital goods would also increase steadily and India would become more and more independent of the import of foreign machinery and capital goods." 1/

1/ P.C. Mahalanobis, The Approach of Operational Research to Planning in India, (Bombay, Asia Publishing House, 1963), p.26.

and, "We adopted the value of $k=1/3$ as we felt it would not be possible to go beyond this value under present conditions". 2/

Mahalanobis's famous k (fraction of investment allocated to the capital goods sector) was therefore set on a priori grounds in relation to the self-sufficient model of the development process visualized by him. The influence of this theme is persistent and is reflected in the emphasis on "self reliance" in India's Fifth Five-Year Plan (1974-1979). 3/ Recently, the Indian planner S. Chakraverty has shown that investment specialization would be justified as the optimal policy in a two sector growth model as soon as non-shiftability of capital is assumed and the "small country assumption" is ruled out on the international trade side. 4/

14. Towards the end of the last decade, the removal of poverty was given an explicit focus in Indian planning. The formal model of the Fifth Plan includes, in addition to the self-reliance objective, a redistribution target, specifically the provision, on an average, of an above poverty-line expenditure level to approximately the poorest third of the population. The consequent impact on the structure of production has also been worked out. While not explicitly recognized in the formal model, this concern is reflected in policy instruments related to the provision of productive employment opportunities to this section of the population. Economic conditions of the rural poor, including landless labourers and marginal farmers, and the wider issue of restructuring of demand in favour of essential wage goods, 5/ have become a matter of intense concern after the oil crisis and its impact on fertilizer availability to India. Adverse weather conditions, and the general need to maintain exportable surpluses, have added to the pressures on domestic supplies. Currently, balance between incomes generated and the supply of wage goods has become the critical constraint to the Indian development effort.

15. The very brief discussion above indicates a few general guidelines. Trade in the present context has to be discussed in the framework of the growth pattern of the Indian economy. Thus a detailed look at the output possibilities being envisaged and investment patterns being anticipated will be essential. The increasingly complex nature of the Eastern European economies and awareness within them of the advantages of interregional specialization possibilities present opportunities for exports from a country such as India. Finally, the recent emphasis in India on planning for wage goods, as well as the constraints on the Indian development effort also need to be considered. It has to be clearly stated at the outset that interregional trade in the present study is examined in the context of a process of economic growth, and not in the framework of short-run re-allocation of resources, as in neo-classical trade theory. In view of the discussion in the preceding paragraphs, interregional trade between the socialist

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2/ Ibid., pp. 40-41.

3/ Government of India, Planning Commission, Draft Fifth Five-Year Plan, (New Delhi, Manager of Publications, 1973), vol.1 pp. 3-6.

4/ S. Chakravarty, "Optimal Investment Policy in An Underdeveloped Economy," in H.C. Bos (Ed.) Towards Balanced International Growth (Amsterdam, North Holland Publishing Company, 1969), pp. 1-18.

5/ Wage goods refer to consumer goods with an income elasticity of demand less than one, such as food and textiles.

countries of Eastern Europe and India may be viewed as a special case of the use of trade as an instrument to trigger off and sustain a process of development in a surplus labour economy, both through the importation of scarce capital and technology for the development of hitherto neglected sectors of the economy, and through providing export markets. This view of trade was emphasized in the last decade by Richard E. Caves in his "vent for surplus" model of trade and growth, 6/ and has received considerable attention since then. 7/ Trade in such a view consists not only of short-run specialization of a fully employed economy in the lines of production in which it is relatively resource-abundant (as in neo-classical theory), but in the expansion of an economy with unutilized resources into new sectors. Such expansion is to be based on the economy's primary endowments, either natural resources or surplus labour, and to be initiated by the import of capital and technology. The process is sustained, however, by interlinkages and complementarities on the domestic supply and demand side and through export markets. In the context being discussed, the question of the role of trade in the short-run framework arises only if either India or the socialist countries of Eastern Europe would face temporary adjustment problems of specific shortages or excess supplies in particuler years on account of instability created by fluctuations in world markets. 8/ Such problems, on a general plane, may be anticipated more for the Indian economy, since its planning techniques ensure relatively less control than those of the Eastern European economies, and also since the structure of its economy is less developed and therefore the cushion of domestic substitution possibilities is more limited.

16. We shall begin the empirical analysis of this study with a disaggregated (66 sector) model of the Indian economy, presenting estimates of India's trade with the socialist countries of Eastern Europe and with the rest of the world. The role of the Eastern European economies and the rest of the world in terms of the relative structure of their economic interrelations with the Indian economy and the impact of such interrelations will be quantitatively estimated. The magnitude of such interrelations and their growth in the past will be discussed, to underline changes in trade patterns. The advantage of conducting the analysis in the multi-sectoral model of the Indian economy will be to capture indirect effects and assess in quantitative terms the linkages of trade with the growth process. The study will also explicitly consider future trade possibilities between India and Eastern Europe in terms of the criteria presented earlier and the sectoral growth possibilities visualized by India's Fifth Five-Year Plan.

6/ See R.E. Caves, et.al., Trade Growth and the Balance of Payments: Essays in Honor of Gottfried Haberler, (Amsterdam, North-Holland Publishing Company, 1965), pp. 95-115.

7/ See for example P.K. Bardhan, "Optimum Trade and Development Policy", in J.N. Bhagwati, et.al., (Ed.), Trade, Balance of Payments and Growth, (Amsterdam, North-Holland Publishing Company, 1971), pp. 183-200.

8/ For an explicit discussion of this role of foreign trade in Eastern Europe economies, see A. Boltho, Foreign Trade Criteria in Socialist Economies (Cambridge, Cambridge University Press, 1971), Chs. 3 and 4, and F.D. Holzman, "Foreign Trade Accounting Methods in Centrally Planned and Capitalist Economies", Journal of International Economics, April 1974, pp. 59-66.

Table 1: India's i
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Planning Commission Commodity Group No.	Name of commodity group	Bulgaria	Czecho-slovakia	G.D.R.	Hungary
(1)	(2)	(3)	(4)	(5)	(6)
1	Foodgrains	Nil	Nil	Nil	Nil
2	Other agriculture	Nil	Nil	0.26	Nil
3	Animal husbandry	Nil	Nil	Neg.	Nil
4	Plantation products	Nil	Nil	Nil	Nil
5	Forestry	Nil	Nil	Nil	0.01
6	Coal	Nil	Nil	Nil	Nil
7	Misc. coal and misc. petroleum products	Neg.	Nil	Nil	Nil
8	Iron Ore	Nil	Nil	Nil	Nil
9	Crude oil			Not Avail	
10	Other minerals	Nil	2.62	Nil	Nil
11	Sugar and gur	Nil	Nil	1.16	Nil
12	Vegetable oils	0.05	Nil	0.42	0.04
13	Tea and coffee	Nil	Nil	Nil	Nil
14	Other food products	0.01	1.54	0.21	0.02
15	Cotton textiles	Nil	Nil	Neg.	Nil
16	Jute textiles	Nil	Nil	Nil	Nil
17	Other textiles	Nil	0.02	0.49	Nil
18	Misc. textile products	Nil	Neg.	Nil	Nil
19	Wood products	Nil	Nil	Nil	Nil
20	Paper and paper products	0.02	3.56	0.84	Neg.
21	Leather and leather products	Nil	Nil	Nil	Neg.
22	Rubber products	0.02	0.04	1.50	0.02
23	Fertilizers	43.75	Nil	13.75	Nil
24	Inorganic heavy chemicals	5.17	0.42	1.69	3.14
25	Organic heavy chemicals	61.37	2.09	11.16	15.21
26	Plastics	0.61	0.02	0.15	0.86
27	Cosmetics and drugs	12.02	0.26	2.66	12.05
28	Man-made fibres	Nil	0.03	Nil	Nil
29	Other chemicals	1.27	3.02	16.31	3.83
30	Petroleum	Nil	Nil	Nil	Nil
31	Cement	Nil	Nil	Nil	Nil
32	Refractories	Nil	Nil	Nil	Nil
33	Other non-metallic mineral products	0.08	0.40	0.21	0.03
34	Iron and steel	12.92	32.08	60.82	28.12
35	Non-ferrous metals	1.29	Nil	0.09	0.79
36	Bolts, nuts etc.	Nil	0.01	Nil	Nil
37	Metal containers	Nil	0.18	Nil	Nil
38	Other metal products	Nil	1.46	0.05	0.09
39	Ball bearings	0.41	2.63	0.28	1.07
40	Office and domestic equipment	Nil	Nil	2.65	0.02
41	Agricultural equipment	Nil	9.21	7.21	Nil
42	Machine tools	Nil	3.34	14.05	0.91
43	Other machinery	3.00	25.04	19.78	0.76
44	Electric motors	Nil	0.85	2.25	0.10
45	Electric wires	Nil	Nil	Nil	Nil
46	Electronics	Nil	0.17	0.71	0.35
47	Batteries	Nil	Nil	Nil	Nil
48	Electrical household goods	Nil	0.28	0.68	0.67
49	Radio	0.04	0.03	0.52	0.14
50	Telephone and telegraph equipment	Nil	0.02	0.01	0.01
51	Other electrics	3.15	2.06	2.71	1.57
52	Motorcycles and bicycles	Nil	0.29	0.03	Nil
53	Motor vehicles	Nil	0.85	1.62	0.19
54	Ships and boats	Nil	Nil	Nil	Nil
55	Aircraft	Nil	0.07	Nil	Nil
56	Railway equipment	Nil	0.01	2.77	7.28
57	Other transport equipment	Nil	Nil	Nil	Nil
58	Watches and clocks	Nil	0.04	0.02	Nil
59	Misc. scientific and industrial instruments	0.02	3.08	9.50	1.94
60	Other industries	Nil	0.01	Nil	Nil
61	Printing	Nil	0.01	0.03	Nil
	TOTAL	145.20	93.74	176.59	79.22

Source: Government of India, Monthly Statistics of the Foreign Trade of India, vol. II, Imports, March
The exact reference period is April 1971 - March 1972.

Notes: Neg. = Negligible (less than .01 million).

a/ In millions of rupees.

orts from the socialist countries of Eastern Europe,
ssified by 61 Commodity groups a/
1971-1972

	Poland	Romania	USSR	Total socialist countries of Eastern Europe	Rest of the world	Total	Percentage share of the socialist countries of Eastern Europe	Percentage share of rest of the world
	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Nil	Nil	Nil	Nil	2 837.74	2 837.74	Nil	16.05
	Nil	Nil	Nil	0.26	1 578.03	1 578.29	0.01	8.92
	1.43	Nil	Nil	1.43	358.21	359.64	0.07	2.03
	Nil	Nil	0.48	0.48	8.59	9.07	0.02	0.05
	Nil	Nil	Nil	0.01	8.00	8.01	Neg.	0.05
	Nil	Nil	Nil	Nil	3.94	3.94	Nil	0.02
	1.11	Nil	Nil	1.11	3.67	4.78	0.05	0.02
	Nil	Nil	Nil	Nil	0.11	0.11	Nil	Neg.
b l e				214.95	1 260.11	1 475.06	10.68	7.13
	44.36	Nil	31.21	78.19	245.76	323.95	3.88	1.39
	0.11	Nil	11.96	13.23	9.08	22.31	0.66	0.05
	0.01	Nil	Neg.	0.52	307.51	308.03	0.03	1.74
	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	1.04	Nil	Neg.	2.82	382.99	385.81	0.14	2.17
	Nil	Nil	Neg.	Nil	14.54	14.54	Nil	0.08
	Nil	Nil	Nil	Nil	Neg.	Neg.	Nil	Neg.
	Neg.	0.07	0.07	0.65	54.69	55.34	0.03	0.31
,	1.18	Nil	Neg.	1.18	13.79	14.79	0.06	0.08
	Nil	Nil	Nil	Nil	5.84	5.84	Nil	0.03
	8.81	0.10	55.79	69.12	375.51	444.63	3.43	2.12
	Nil	Nil	Nil	Nil	1.24	1.24	Nil	0.01
	0.24	1.64	0.66	4.12	26.51	30.63	0.20	0.15
	58.44	57.94	21.74	195.62	722.07	917.69	9.72	4.08
	10.08	4.82	1.41	26.73	172.71	199.44	1.33	0.98
	25.83	7.14	20.04	142.84	376.08	518.92	7.09	2.13
	0.33	0.10	0.72	2.79	125.64	128.43	0.14	0.71
	25.35	1.50	5.17	59.01	209.11	268.12	2.93	1.18
	Nil	Nil	Nil	0.03	103.44	103.47	Neg.	0.59
	4.43	Nil	0.98	29.84	331.52	361.36	1.48	1.87
	Nil	Nil	Nil	Nil	466.66	466.66	Nil	2.64
	Nil	Nil	Nil	Nil	0.69	0.69	Nil	Neg.
	8.23	Nil	38.86	47.09	17.57	64.66	2.34	0.10
	1.59	0.01	1.02	3.34	484.62	487.96	0.17	2.74
	74.83	28.88	73.59	311.24	2 095.35	2 406.59	15.46	11.85
	Nil	Nil	28.71	30.88	986.75	1 017.63	1.53	5.58
	0.24	0.06	0.15	0.46	11.08	11.54	0.02	0.06
	0.44	Nil	Nil	0.62	7.00	7.62	0.03	0.04
	1.70	0.88	1.01	5.19	65.26	70.45	0.26	0.37
	8.02	5.55	24.69	42.65	79.99	122.64	2.12	0.45
	0.07	Nil	1.20	3.94	69.94	73.88	0.20	0.40
	62.48	0.15	40.69	119.74	146.30	266.04	5.95	0.83
	15.24	1.03	15.85	50.42	266.11	316.53	2.50	1.51
	30.01	4.29	210.84	291.72	1 262.91	1 554.63	14.49	7.14
	1.05	0.02	15.92	20.19	77.83	98.02	1.00	0.44
	0.07	Nil	2.42	2.49	141.84	144.33	0.12	0.80
	0.05	0.06	3.47	4.81	105.41	110.22	0.24	0.60
	0.02	Nil	Nil	0.02	11.57	11.59	Neg.	0.07
	0.29	Nil	1.78	3.70	62.10	65.80	0.18	0.35
	0.02	Nil	0.30	1.05	46.03	47.08	0.05	0.26
	Nil	Nil	3.38	3.42	81.39	84.81	0.17	0.46
	27.07	0.03	54.92	91.51	671.11	762.62	4.55	3.80
	2.67	Nil	0.80	3.79	7.28	11.07	0.19	0.04
	51.71	0.66	5.94	60.97	295.66	356.63	3.03	1.67
	0.11	Nil	Nil	0.11	16.03	16.14	0.01	0.09
	0.90	Nil	20.35	21.32	244.21	265.53	1.06	1.38
	6.50	Nil	0.50	17.06	182.33	199.39	0.85	1.03
	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nil	Nil	Nil	0.06	8.11	8.17	Neg.	0.05
	2.06	0.34	12.49	29.43	158.25	187.68	1.46	0.89
	0.04	0.13	0.01	0.19	13.93	14.12	0.01	0.08
	0.39	0.04	0.49	0.96	61.89	62.85	0.05	0.35
	478.55	155.44	709.61	2 013.30	17 681.63	19 694.93	100.00	100.00

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D. ECONOMIC INTERRELATIONS BETWEEN INDIA AND THE SOCIALIST COUNTRIES OF EASTERN EUROPE: STRUCTURE AND IMPACT

17. For the purpose of this study, the economic interrelations of the socialist countries of Eastern Europe and India have been recast to permit analysis as a part of the formal model of India's Fifth Five-Year Plan. 9/ While this procedure involved the retabulation of trade data, classified by the Indian variant of the Standard International Trade Classification (the RITC - Revised Indian Trade Classification), into 66 sectors of the Indian Plan, it possessed certain obvious advantages. The analysis of the structure and impact of trade with the socialist countries of Eastern Europe on the Indian economy could be conducted as a part of a model containing the most up-to-date and complete information available on the structure of the Indian economy. Again, it was felt that the policy conclusions of the study would have greater usefulness if related to the model underlying India's current development plan. We first discuss the structure and impact of India's imports from the socialist countries, and subsequently the patterns of exports.

18. Table I details India's imports, by commodity, from the socialist countries of Eastern Europe and the rest of the world for 61 commodity groups 10/. The totals for the socialist countries of Eastern Europe are further broken down by countrywise estimates for the seven economies of Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania and the USSR. In 1971-1972 10.22 per cent of India's total imports were purchased from the socialist countries of Eastern Europe. If, somewhat conveniently, the commodity specialization of socialist country exports to India is defined as those commodity groups where the share of socialist country exports is greater than the share of their total exports to India, the following are isolated: miscellaneous coal and miscellaneous petroleum products, crude oil, other minerals, sugar and gur, paper and paper products, rubber products, fertilizers, inorganic heavy chemicals, organic heavy chemicals, cosmetics and drugs, refractories, iron and steel, metal containers, ball-bearings, agricultural equipment, machine tools, other machinery, electric motors, other electricals, motor-cycles and bicycles, and miscellaneous scientific and industrial instruments. It is instantly obvious from the above list that the socialist countries of Eastern Europe have been specializing in the supply of basic intermediates and equipment to India. In particular, they have been supplying India with some of the basic products of the petro-chemical complex of industries, basic metals - particularly iron and steel - and a variety of equipment and machinery products. In view of India's present difficulties on the wage goods

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9/ Government of India, Planning Commission, A Technical Note on the Approach to the Fifth Plan of India, (New Delhi, Planning Commission, 1973).

10/ In this table the last four commodity classifications of the Indian planning model have been omitted because they refer to local sectors not entering into international trade.

and, particularly, the food supply front, the specialization of the socialist countries of Eastern Europe in the supply of items such as fertilizers, chemicals from oil, gas and coal (included in miscellaneous coal and miscellaneous petroleum products), electrical and agricultural equipment may be noted, particularly since the present Indian crisis can be related to the provision of fertilizer (imported, or through fuller utilization of domestic production capacity by balancing imports) and assured water supplies. Countrywise in 1971-1972, India's major trading partners in terms of imports from the socialist countries of Eastern Europe were the USSR, Poland, the German Democratic Republic, and Bulgaria (in that order). The USSR made a substantial contribution to Indian imports of equipment and machinery from the socialist countries, and also products such as non-ferrous minerals (other minerals) and their products (refractories), non-ferrous and ferrous metals (iron and steel), paper and sugar. Poland possessed an extremely diversified pattern in Indian imports, participating in the supply of most sectors, with major specialization in chemicals (fertilizers, organic and inorganic chemicals and drugs) iron and steel and non-ferrous minerals. The German Democratic Republic specialized mainly in the supply of iron and steel, equipment and machinery, and Bulgaria mainly in chemical products, including fertilizers. Czechoslovakia specializes mainly in the supply of equipment and machinery, Hungary in iron and steel, and Romania in fertilizers.

19. Another interesting method of examining the impact of India's imports from the socialist countries of Eastern Europe is to look into the imports by sector of use, rather than the commodity structure of imports as analysed above. Thus the aggregate import coefficient (for current input use only) of a sector of the Indian economy may be examined rather than the commodity structure of imports. Aggregate import coefficients for 66 sectors of the Indian economy are presented in table II, separately broken down by the import coefficient from the socialist countries, and the import coefficient from the rest of the world. It may be noted that these are direct coefficients of imports in relation to output and total import requirements.

20. As is well known, total requirements can be estimated more accurately from a disaggregated matrix of import coefficients than from a sector of aggregate import coefficients. The estimates in table II give a convenient summary of the direct dependence of different sectors of the Indian economy on imports from the socialist countries and the rest of the world, for inputs for current production, per unit of domestic output. The estimates show that in absolute magnitudes the only sector which is more dependent on imports from the socialist countries of Eastern Europe than on the rest of the world is other minerals. We have noted in paragraph 18 that the socialist countries supplied only 10.22 per cent of India's aggregate imports in 1971-1972. Given the different relative sizes of the economies of the socialist countries and the rest of the world, the fact that the Indian economy depends on the latter rather than on the former is to be expected. Thus the dependence of a sector of the Indian economy on the socialist countries and on the rest of the world should be examined in a relative sense. Given the overall volume of trade relations, between India and the socialist countries on the one hand, and between India and the rest of the world on the other, relative sectoral dependence on imports from the socialist countries of Eastern Europe is said to exist when the ratio of the sector's import coefficient from the socialist countries to the import coefficient from the rest of the world is greater than the ratio of India's total imports from the socialist countries to her total imports from the rest of the world. In this relative context, the following

Table II: Total import coefficients of India for 66 sectors of the Indian planning model: Socialist countries of Eastern Europe and rest of the world, 1973-1974

(Imports per thousand rupees of output in 1971-1972 producer prices)

Planning Commission number of sector	Name of sector	Socialist Countries of Eastern Europe	Rest of the world
(1)	(2)	(3)	(4)
1	Foodgrains	2.70	10.30
2	Other agriculture	0.63	2.64
3	Animal husbandry	Neg.	0.09
4	Plantation	6.69	33.17
5	Forestry	Nil	Nil
6	Coal	Neg.	0.02
7	Misc. coal and misc. petroleum products	0.01	0.04
8	Iron ore	Neg.	0.04
9	Crude oil	Neg.	0.02
10	Other minerals	Neg.	Nil
11	Sugar and gur	Nil	Nil
12	Vegetable oils	0.06	34.22
13	Tea and coffee	Nil	Nil
14	Other food products	Neg.	0.56
15	Cotton textiles	0.02	58.17
16	Jute textiles	Neg.	3.49
17	Other textiles	0.11	27.72
18	Misc. textile products	Neg.	1.43
19	Wood products	0.01	1.50
20	Paper and paper products	21.60	114.65
21	Leather and leather products	0.02	4.25
22	Rubber products	1.15	17.05
23	Fertilizers	21.55	87.28
24	Inorganic heavy chemicals	7.12	42.55
25	Organic heavy chemicals	8.14	43.80
26	Plastics	17.37	82.00
27	Cosmetics and drugs	33.47	121.56
28	Man-made fibres	16.69	109.11
29	Other chemicals	8.87	83.53
30	Petroleum products	82.22	482.09
31	Cement	Neg.	0.04
32	Refractories	0.42	1.31
33	Other non-metallic mineral products	0.70	29.22
34	Iron and steel	1.34	12.19
35	Non-ferrous metals	5.19	148.13
36	Bolts, nuts, etc.	7.34	49.20
37	Metal containers	1.09	9.84
38	Other metal products	1.47	19.51

Table II (contd.)

(1)	(2)	(3)	(4)
39	Ball bearings	0.44	3.91
40	Office and domestic equipment	0.32	2.79
41	Agricultural equipment	0.37	2.53
42	Machine tools	7.77	52.57
43	Other machinery	14.98	94.54
44	Electric motors	1.27	5.63
45	Electric wires	4.49	140.30
46	Electronics	0.50	5.01
47	Batteries	1.26	37.70
48	Electrical household goods	0.35	5.13
49	Radio	9.92	82.96
50	Telephone and telegraph equipment	1.21	30.33
51	Other electricals	4.37	60.76
52	Motorcycles and bicycles	0.61	3.55
53	Motor vehicles	8.89	63.45
54	Ships and boats	8.28	55.88
55	Aircraft	0.12	1.06
56	Railway equipment	0.95	17.68
57	Other transport equipment	0.32	2.13
58	Watches and clocks	0.21	1.68
59	Misc. scientific and industrial instruments	17.20	158.66
60	Other industries	0.61	16.89
61	Printing	40.32	215.52
62	Electricity	Nil	Nil
63	Construction	Nil	Nil
64	Railways	Nil	Nil
65	Other transport	Nil	Nil
66	Other services	Nil	Nil

Notes: 1. The 66-sector planning model refers to sectors of industrial activity in the Indian economy.

2. In this table and some others in the study, as well as for references in the text itself, which give aggregate figures for the socialist countries of Eastern Europe without breaking down the total figure by country, Yugoslavia is included.

3. These figures, and those for tables III, IV and V, have been rounded; more complete figures are available.

sectors are isolated: foodgrains, other agriculture, plantations, coal, miscellaneous coal and miscellaneous petroleum products, iron ore, crude oil, other minerals, paper products, fertilizers, inorganic heavy chemicals, organic heavy chemicals, plastics, cosmetics and drugs, man-made fibres, petroleum products, refractories, iron and steel, bolts and nuts, metal containers, ball-bearings, office and domestic equipment, agricultural equipment, machine tools, other machinery, electric motors, radio, motor-cycles and bicycles, motor vehicles, ships and boats, other transport equipment, watches and clocks, miscellaneous scientific instruments and printing.

21. This list shows again the relative strength of the interrelation between the intermediate and equipment producing sectors of the Indian economy and the socialist countries of Eastern Europe. Agricultural sectors such as foodgrains, other agriculture and plantations are now also included. In addition, certain other consumer and consumer durable sectors are a part of the list, such as plastics, man-made fibres, office and domestic equipment, motor vehicles, watches and clocks, and printing.

22. In this section we examine the linkages of India's import structure by estimating the direct and indirect requirements of imports from the socialist countries of Eastern Europe and the rest of the world per unit of final demand in each of the 66 sectors of the Indian economy. Such direct and indirect import requirements may be estimated in two ways. One method would be to work out the direct and indirect import requirements per unit (say one Rupee) of final demand met from domestic output alone. 11/ Table III estimates such direct and indirect import requirements, per unit of final demand met from domestic output, for each sector of the Indian economy, separately for the socialist countries of Eastern Europe and the rest of the world. The estimates show that the total requirements, direct and indirect, per unit of final demand met from domestic sources, are much higher from the rest of the world than from the socialist countries for every sector. Defining relative dependence again as in paragraphs 19 and 20 (sectoral ratio of direct and indirect import coefficients per unit of final demand from socialist countries to the import coefficients from the rest of the world being greater than the ratio of total imports from socialist countries to total imports from the rest of the world) the following sectors are isolated as being relatively dependent on imports from socialist countries: foodgrains, other agriculture, animal husbandry, plantations, forestry, coal, miscellaneous coal and miscellaneous petroleum products, iron ore, crude oil, other minerals, sugar and gur, tea and coffee, other food products, jute textiles, wood products, paper and paper products, fertilizers, inorganic heavy chemicals, organic heavy chemicals, plastics, cosmetics and drugs, man-made fibres, petroleum products, cement, refractories, bolts and nuts, ball-bearings, machine tools,

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11/ If X^m is a column vector (n x 1) of direct and indirect requirements of imports, M is a matrix (n x n) of import coefficients, I is an identity matrix (order n), A is a matrix (n x n) of domestic input coefficients and F^d is a column vector (n x 1) of final demand met from domestic output alone, it is well known that:

$$X^m = M (I - A)^{-1} F^d$$

If F_i^d is set at 1 for the ith sector and 0 for all other sectors, direct and indirect requirements of imports per unit of final demand met from domestic output can be estimated.

Table III: Direct and indirect requirements of imports from the socialist countries of Eastern Europe and the rest of the world, per thousand rupees of domestic final demand, met from Indian domestic output alone - for 66 sectors of the Planning Model 1973-1974, (1971-1972 prices)

Planning Commission number of sector	Name of sector	Socialist countries of Eastern Europe	Rest of the world
(1)	(2)	(3)	(4)
1	Foodgrains	3.72	15.12
2	Other agriculture	1.10	5.13
3	Animal husbandry	0.72	3.66
4	Plantation	7.61	40.01
5	Forestry	0.08	0.69
6	Coal	1.70	11.62
7	Misc. coal and misc. petroleum products	1.46	9.41
8	Iron ore	2.98	19.48
9	Crude oil	0.45	3.36
10	Other minerals	2.85	19.19
11	Sugar and gur	1.08	5.96
12	Vegetable oils	1.06	47.20
13	Tea and coffee	4.20	23.08
14	Other food products	1.64	10.31
15	Cotton textiles	1.25	70.30
16	Jute textiles	8.24	9.37
17	Other textiles	4.93	68.02
18	Misc. textile products	0.90	14.19
19	Wood products	0.67	6.19
20	Paper and paper products	24.62	136.54
21	Leather and leather products	2.03	24.01
22	Rubber products	3.38	40.85
23	Fertilizers	2.44	103.72
24	Inorganic heavy chemicals	9.24	60.81
25	Organic heavy chemicals	7.49	44.16
26	Plastics	15.73	80.53
27	Cosmetics and drugs	35.90	131.06
28	Man-made fibres	14.85	103.21
29	Other chemicals	5.83	75.16
30	Petroleum products	58.42	353.37
31	Cement	1.95	12.72
32	Refractories	1.74	102.26
33	Other non-metallic mineral products	1.83	39.81
34	Iron and steel	2.90	30.11
35	Non-ferrous metals	8.28	209.45
36	Bolts, nuts, etc.	9.26	67.51
37	Metal containers	2.86	30.80
38	Other metal products	3.10	44.73

Table III (cont'd)

(1)	(2)	(3)	(4)
39	Ball bearings	2.03	19.61
40	Office and domestic equipment	1.86	20.20
41	Agricultural equipment	1.61	16.57
42	Machine tools	9.14	68.61
43	Other machinery	17.82	123.11
44	Electric motors	4.20	65.14
45	Electric wires	8.02	203.07
46	Electronics	2.30	27.10
47	Batteries	3.23	65.63
48	Electrical household goods	3.42	60.95
49	Radio	12.85	109.85
50	Telephone and telegraph equipment	3.18	66.06
51	Other electricals	7.20	109.92
52	Motor cycles and bicycles	2.81	26.99
53	Motor vehicles	15.42	116.08
54	Ships and boats	12.88	93.12
55	Aircraft	1.59	18.77
56	Railway equipment	2.85	40.25
57	Other transport equipment	1.02	8.78
58	Watches and clocks	2.00	22.68
59	Misc. scientific and industrial instruments	19.86	197.63
60	Other industries	5.17	58.45
61	Printing	42.68	231.48
62	Electricity	0.84	6.68
63	Construction	1.10	15.70
64	Railways	0.74	6.49
65	Other transport	2.49	15.66
66	Other services	1.19	1.47

NOTE: Direct and indirect requirements of imports to produce one unit of final demand met from domestic sources are estimated from:

$X^m = M (I - A)^{-1} F^d$ (See text for notation);

F_i^d is set at one for the ith sector and at zero for all other sectors, to obtain the estimates for the ith sector.

Source: Government of India, Planning Commission, A Technical Note on the Approach to the fifth Plan of India (New Delhi, Planning Commission, 1973), annexure III, table III - 3 and table III - 4, pp. 37-58.

other machinery, electric motors, radio, motor-cycles and bicycles, motor vehicles, ships and boats, other transport equipment, printing, electricity, railways, other transport, and other services. Comparison of the sectors of the Indian economy relatively dependent on the socialist countries of Eastern Europe as seen through direct import coefficients (paragraphs 19 and 20) and as now seen through direct and indirect import coefficients is instructive. The wider network of linkages of imports from the socialist countries with the Indian economy is shown by the fact that a larger total number of sectors is shown to be relatively specializing in imports from the socialist countries when examined through direct and indirect import requirements rather than through direct imports. The total of such sectors is increased by six when both direct and indirect import requirements are taken into consideration. However, the composition of sectoral dependence also changes. The sectors which are not relatively dependent on imports from the socialist countries as seen through direct import requirements, but which are dependent when both direct and indirect requirements are considered include the following: animal husbandry, forestry, sugar and gur, tea and coffee, other food products, jute textiles, wood products, cement, electricity, railways, other transport, and other services. Sectors shown above as relatively specializing in imports from the socialist countries of Eastern Europe through direct import coefficients, but not shown so when examined through direct and indirect import dependence, include the following: iron and steel, metal containers, office and domestic equipment, agricultural equipment, watches and clocks, and miscellaneous scientific instruments.

23. It is obvious from the above lists that in the sense of direct and indirect import dependence, agro-based sectors of the Indian economy specialize in interrelations with the Eastern European economies. Again, local infrastructure-supplying sectors, such as electricity, railways, other transport and other services also figure in the list.

24. Another method of estimating such direct and indirect requirements of imports, per unit of final demand, would be explicitly to include the final demand met directly from imports. Accordingly, the imports used for final demand and for inter-industry consumption, directly and indirectly, are estimated per unit of final demand generated in the economy. 12/ Such estimates are presented in table IV. Given the structure of the Indian economy at present, the use of imports for directly meeting final demand is crucially important for certain equipment producing sectors, where such imports are necessary for fixed investment purposes. In the case of sectors such as agricultural implements, machine tools, other machinery, electric motors, telephone and telegraph equipment, motor vehicles, ships and boats, aircraft and rail equipment, from 90 to 100 per cent of imports are used directly for fixed investment purposes. 13/ In certain other sectors, such as petroleum products and drugs, imports are substantially used for satisfying public and/or private consumption demand. The socialist countries of

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12/ In addition to the terminology used in the last footnote, if F^M is a column vector (n x 1) of final demand met from imports,

$X^m = M(I - A)^{-1} F^d + F^M$

Now a unit of final demand in the ith sector can be distributed for the sector between F_i^d and F_i^M such that $F_i^d + F_i^M = 1$ and the direct and indirect import requirements estimated for the ith sector.

13/ See: Government of India, Planning Commission, A Technical Note on the Approach to the Fifth Plan of India (New Delhi, Planning Commission, 1973), table III - 2, p. 36.

Table IV: Direct and indirect requirements of imports from the socialist countries of Eastern Europe and the rest of the world per thousand rupees of total demand (final and intermediate) - for relevant sectors of the planning model - 1973-1974.
(1971 - 1972 prices)

Planning Commission number of sector	Name of Sector	Socialist countries of Eastern Europe	Rest of the world
(1)	(2)	(3)	(4)
2	Other agriculture	1.44	5.47
12	Vegetable oils	4.95	50.91
14	Other food products	124.32	131.92
20	Paper and paper products	26.02	137.79
21	Leather and leather products	2.09	24.07
26	Plastics	17.81	82.48
27	Cosmetics and drugs	117.13	204.27
30	Petroleum products	326.57	537.52
33	Other non-metallic mineral products	3.61	41.52
38	Other metal products	4.69	46.26
40	Office and domestic equipment	44.35	61.90
41	Agricultural equipment	86.94	100.62
42	Machine tools	77.75	133.11
43	Other machinery	461.56	519.28
44	Electric motors	29.69	89.07
45	Electric wires	24.24	216.10
46	Electronics	3.61	28.37
47	Batteries	10.25	72.21
48	Electrical household goods	4.33	61.81
50	Telephone and telegraph equipment	40.77	101.28
51	Other electricals	87.27	180.99
53	Motor vehicles	44.03	141.77
54	Ships and boats	40.97	118.93
55	Aircraft	182.81	196.87
56	Railway equipment	29.12	65.54
57	Misc. scientific and industrial instruments	118.37	278.27
60	Other industries	9.39	62.45
61	Printing	59.92	245.32
65	Other transport	87.55	99.60
66	Other services	56.37	57.58

NOTES: 1. Direct and indirect requirements of imports to produce one unit of final demand are estimated from:

$X^m = M\,(I-a)^{-1}\,F^d + F^m$ (See text for notation)

$F^d_i + F^m_i$ is set at one for the ith sector and at zero for all other sectors, to obtain the estimates for the ith sector.

2. Estimates are only presented for the sectors for which $F^m_i > 0$. For other sections, the estimates are as in Table III.

Source: In addition to data sources for estimates in table III of this study, tables III-1 and III-5, p.35 and 59, in A technical note on the approach to the Fifth Plan of India, op cit. have been used.

Eastern Europe specialize as a source of such equipment and intermediate imports of India. Thus for such sectors, as a comparison of table III with table IV indicates, the inclusion of imports into final demand considerably enhances the relative impact of imports from the socialist countries on the Indian economy. To conclude, the stronger linkage between the Indian and the socialist countries' economies pertains to equipment and intermediate products imports. In addition to such inter-linkages, when both the direct and indirect requirements of imports are quantified many of the agro-based sectors of the Indian economy are shown to possess significant inter-relations with the Eastern European economies.

25. Table V below gives estimates of India's exports to the socialist countries of Eastern Europe in 1971-1972. 14/ The USSR accounted for approximately 65 per cent of India's exports to the socialist countries of Eastern Europe, and Czechoslovakia approximately a tenth, while the remaining socialist countries' share ranged from 3 to 6 per cent. India's exports to the socialist countries of Eastern Europe were 21.4 per cent of her total exports in 1971-1972. However, these countries accounted for 65.2 per cent of India's total exports of oilseed cake and meal, 57.3 per cent of India's total coffee exports, 54.2 per cent of total clothing exports, 41.4 per cent of her exports of unmanufactured tobacco, and 34.5 per cent of total leather exports. On the other hand, India exported only 11.2 per cent of her total exports of engineering goods to the socialist countries.

26. Given the fact that India exports mainly primary commodities to the socialist countries, it is obvious that the indirect effects of such exports are rudimentary, since the extent of domestic processing of such commodities is limited.

27. Because India imports mainly equipment and intermediate products from the socialist countries of Eastern Europe and exports mainly primary products, a brief analysis of the unit prices received for exports and paid for imports may be of some interest. This is particularly so since prices in India's trade with the socialist countries are determined, amongst other factors, through bilateral negotiations. Estimates of unit prices for certain important Indian export commodities, presented in table VI, suggest that generally India received favourable prices from the socialist countries of Eastern Europe as compared to the rest of the world, for the products contained in that table. Data on estimates of

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14/ Export data from India to the socialist countries of Eastern Europe has also been cast in the structure of the 66 sectors planning model of the Indian economy. However, the estimates have been presented differently in this study, due to two reasons. The major content of India's exports to Eastern Europe is in agro-based and other primary products. It was found that the 66 sector classification of the Indian economy was not detailed enough, particularly regarding the agro-based and primary sectors, and tended to aggregate over important details. Secondly, the export of equipment and metal products was not important enough in India's exports to the socialist countries to permit functional use of the 66 sector classification, which was highly disaggregated for such sectors. Thus the 66 sector classification was neither economical nor functional in analysing India's exports to the socialist countries. Instead, a classification of India's exports to these countries used in a recent official Indian Source has been adopted in this report. See "India's Trade with Eastern European Countries," Reserve Bank of India Bulletin, March 1974, pp. 418-467.

Table V: India's exports to the socialist countries of Eastern Europe, 1971-1972
(In Rs. millions)

	Commodities	Bulgaria	Czecho-slovakia	GDR	Hungary	Poland	Romania	USSR	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I	Jute manufactures	28.8	37.3	35.8	17.4	1.2	5.0	314.8	440.3
II	Tea	1.0	5.7	5.0	0.4	46.6	-	329.9	388.6
III	Cotton textiles	-	32.9	0.6	0.6	2.0	4.7	88.1	128.9
IV	Iron ore and concentrates	11.8	38.0	-	6.9	25.0	62.3	-	144.0
V	Cashew kernels	1.1	7.2	7.5	0.3	1.3	1.0	180.1	198.5
VI	Tobacco, unmanufactured	-	19.3	2.8	-	-	-	152.8	174.9
VII	Spices	3.5	7.8	3.0	7.7	10.1	6.3	77.1	115.5
VIII	Oilseeds, cake and meal	10.9	34.0	48.9	52.8	58.7	4.2	34.4	243.9
IX	Coffee	9.0	5.1	4.9	-	-	6.6	74.6	100.2
X	Cotton, raw and waste	20.4	5.9	2.4	3.3	0.9	0.4	-	33.3
XI	Mica	1.5	10.4	8.9	5.7	17.4	3.1	51.6	98.6
XII	Raw jute	0.1	-	-	-	-	-	23.9	24.0
XIII	Engineering goods	5.5	7.3	11.0	16.9	4.1	1.9	50.4	97.1
XIV	Iron and steel	0.5	-	-	-	-	5.9	77.7	84.1
XV	Leather	28.6	30.2	25.1	14.2	10.5	3.1	166.9	278.6
XVI	Clothing	0.5	10.2	0.1	5.9	2.3	-	182.7	201.7
XVII	Castor	-	3.9	1.6	-	-	-	55.4	60.9
XVIII	Groundnut (H.P.S.)	2.7	6.7	2.3	0.5	2.0	1.6	19.7	35.5
XIX	Coir yarn & manufactures	7.0	6.4	4.1	6.0	2.4	3.4	17.1	46.4
XX	Footwear	1.5	-	-	-	-	-	33.6	35.1
XXI	Others	20.4	36.6	15.7	16.6	14.6	1.9	156.2	262.0
	TOTAL	154.8	304.9	179.7	155.2	199.1	111.4	2087.0	3192.1

Source: Reserve Bank of India Bulletin, March, 1974, pp. 436-443. The exact period of reference is April 1971 to March 1972.

unit value of exports of socialist countries to India, presented in table VII, does not present a uniformly consistent picture. However, apart from the case of chloroform and octanol, no persistent trend of relatively higher unit prices of socialist country exports to India is shown. By and large, India seems to be trading on favourable terms with the socialist countries of Eastern Europe, even though her imports are largely of manufactured goods and exports predominantly of primary commodities.

28. It may be noted that the 1950s and 1960s witnessed a very fast growth of trade between India and the socialist countries. In 1952-1953 the level of such trade was quite low when compared with total Indian world trade. Exports to and imports from the socialist countries of Eastern Europe had a value of only several million Roubles each, of a total export and import level of Rs. 5537 million and Rs. 6354 million respectively. However, by 1960-1961, Eastern European trade accounted for 7.8 per cent of India's total exports and 3.9 per cent of India's total imports. This momentum was maintained, and in 1972-1973 Indian trade with the socialist countries of Eastern Europe accounted for 24.0 per cent of India's total exports and 12.1 per cent of its total imports. Table VIII shows that the expansion of trade between India and the socialist countries of Eastern Europe during the last two decades was more or less evenly shared by the individual socialist countries.

29. Trade activities in the socialist countries of Eastern Europe are conducted by State-owned agencies, and in India by both State-owned agencies and firms in the private sector. From the institutional angle, the history of trade relations between India and socialist countries is one of a gradual development and evolution of more complex mechanisms as the structure of trade grew in size and level of diversification.

30. The earliest agreements that India made with some of the socialist countries of Eastern Europe, immediately after attaining independence, were really barter agreements providing for exchange of scarce commodities through quota provisions. In the period 1953-1954 India signed trade and payments agreements with each of the socialist countries. The agreements included schedules of commodities to be traded which were periodically revised, most-favoured-nation (MFN) treatment clauses, and payments arrangements. An MFN clause was inserted in each of the bilateral agreements. Generally it also provided for exceptions, such as advantages accorded by either party to contiguous countries.

31. The payments arrangements generally were effected in non-convertible rupees, with a settlement clause. The central banks of the socialist countries opened accounts with the Indian Central Bank (The Reserve Bank of India) and other commercial banks in India. The latter accounts provided for mutual transfers of funds. Generally, attempts were made to balance trade. Trade surpluses or deficits could be cleared in a mutually acceptable manner, through technical credits, offset arrangements or in convertible currencies or gold. The bilateral arrangements led to substantial expansion of trade after the mid-1950s. Most careful Indian students of the bilateral trade and payments agreements have concluded that they were instrumental in increasing trade and not in restricting it.[15/]

32. Since 1959, long term payments agreements provide for payment adjustments in non-convertible Rupees, with technical credits and offset arrangements for balancing The agreements provided for schedules of commodities for exports and imports. Annual trade plans were prepared and in some cases Joint Committees set up to review difficulties.

15/ Sunanda Sen, op.cit., pp. 98-106. Also see Sumitra Chisti, India's Trade with East Europe. (New Delhi, Indian Institute of Foreign Trade, 1973).

Table VI: Unit value of selected exports from India to the socialist countries of Eastern Europe

(In Rupees)

	Commodities	Unit of quantity	1968-69		1969-70		1970-71		1971-72	
			Socialist countries of East Europe	Other countries	Socialist countries of East Europe	Other countries	Socialist countries of East Europe	Other countries	Socialist countries of East Europe	Other countries
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Cashew kernels, whole	Kg.	10.55	10.16	10.12	10.15	11.07	11.05	10.77	10.88
2	Coffee Arabica plantation 'A'	Kg.	6.81	6.46	6.69	6.34	8.08	7.84	6.66	6.51
3	Tea black leaf in bulk	Kg.	8.92	7.69	7.98	6.97	8.14	7.34	8.08	7.57
4	Tea black dust in bulk	Kg.	5.37	6.96	-	6.54	-	-	7.46	7.05
5	Black pepper, garbled	Kg.	5.13	5.27	7.44	7.06	8.56	6.65	7.75	7.96
6	Solvent extracted groundnut oilcake	Tonne	606.51	577.53	660.81	635.80	674.97	667.17	573.00	550.00
7	Solvent extracted cottonseed oilcake, decorticated	Tonne	506.43	462.62	545.95	441.62	529.35	508.81	537.52	452.37
8	Virginia flue cured tobacco	Kg.	5.85	7.60	6.18	7.37	7.59	7.62	8.01	7.97
9	Bengal Assam raw cotton	Tonne	5 700.95	5 941.29	4 117.03	4 115.25	4 561.53	4 296.49	4 967.00	5 228.86
10	Mica (Bihar and Rajasthan good stained block)	Kg.	119.81	73.09	108.49	55.20	108.61	116.65	110.55	41.84
11	Mica (Bihar and Rajasthan stained block)	Kg.	81.52	24.50	59.44	27.44	60.84	50.91	55.81	31.57
12	Iron ore	Tonne	60.66	50.58	62.05	52.56	60.31	54.08	64.33	49.94
13	Sandalwood oil	Kg.	268.55	250.48	297.78	255.62	229.05	240.06	212.39	224.50
14	Sheep and lamb skin veg. tanned (unfinished)	Kg.	39.12	34.95	39.08	39.82	37.25	39.34	40.35	45.96
15	Goat and kid skin bark tanned (unfinished)	Kg.	38.16	32.34	45.07	31.05	38.49	31.58	27.11	37.12
16	Cotton yarn and thread singles, carded	Kg.	6.95	6.34	6.45	5.88	7.00	6.49	8.60	7.47
17	Coir yarn	Kg.	2.17	2.07	2.19	.37	.54	2.25	2.41	2.14
18	Sheeting carded yarn (unbleached)	Sq.m.	1.08	1.15	1.35	1.03	1.58	1.32	1.09	1.30
19	Hessian cloth	Tonne	2 950.52	3 089.11	3 905.75	3 110.15	3 54[illegible]	3 598.45	3 386.24	3 670.66
20	Packing cloth	Tonne	1 940.59	2 269.62	-	2 879.71	2 596.99	2 699.56	-	3 048.95
21	Jute packing Bags	Tonne	1 934.49	2 058.65	2 580.10	1 968.98	2 [illegible]56	2 505.06	2 864.99	2 797.85

Source: Reserve Bank of India Bulletin, Op. cit., pp. 479, 444-478.

Table VII: Unit value of selected exports from socialist countries of Eastern Europe to India

(In Rupees)

Commodities	Unit of quantity	1968-69		1969-70		1970-71		1971-72	
		Socialist countries of East Europe	Other countries	Socialist countries of East Europe	Other countries	Socialist countries of East Europe	Other countries	Socialist countries of East Europe	Other countries
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1 Kerosene	Tonne	-	-	220.38	204.67	252.52	262.65	267.72	248.04
2 Lubricants	Tonne	-	-	593.46	705.96	864.80	685.78	545.99	766.69
3 Naphthalene	Kg.	2.19	2.13	1.25	1.71	0.89	0.82	1.64	0.98
4 Chloroform	Kg.	2.61	2.38	2.40	2.26	2.41	2.10	-	2.49
5 Octanol	Kg.	3.04	2.79	2.77	2.31	2.50	2.30	3.07	2.51
6 Urea	Kg.	0.67	0.85	0.68	0.63	0.61	0.70	0.51	0.52
7 Sulphonamide	Kg.	9.00	6.23	9.74	8.57	8.98	29.51	-	-
8 Titanium dioxide	Kg.	4.20	3.28	4.68	3.52	4.65	3.13	3.44	3.73
9 Sulphathiozole	Kg.	33.61	29.98	29.97	25.88	33.52	34.10	32.80	39.34
10 Sulphadiazine	Kg.	51.77	41.90	54.07	39.34	63.47	51.21	100.63	67.23
11 Urea (containing not more than 45% nitrogen)	Tonne	667.48	659.82	582.78	637.92	532.45	623.89	473.93	521.13
12 Potassium chloride, commercial	Tonne	388.93	383.56	359.92	325.92	357.58	409.12	387.70	350.65
13 Newsprint	Kg.	1.11	1.15	1.32	1.14	1.30	0.92	1.40	1.31
14 Heavy plates etc., boiler quality	Tonne	1 081.93	1 059.96	1 394.57	1 104.04	1 898.60	1 832.32	1 559.42	2 056.91
15 Plates and sheets (below 3 mm. thick, iron and steel uncoated)	Tonne	1 130.07	3 061.72	1 300.13	2 620.35	1 826.07	3 379.88	1 637.25	2 945.65
16 Tinned plates and sheets	Tonne	1 573.16	1 179.44	1 489.75	1 306.68	1 638.06	1 393.94	1 637.54	1 610.00
17 Tubes and pipes of iron and steel (except cast-iron) seamless tubes and pipes	Tonne	2 338.73	4 012.08	3 227.62	3 704.09	3 235.42	3 539.29	4 935.49	4 639.38

Sources: Reserve Bank of India Bulletin, pp. 430, 458-467

Table VIII. Growth of trade between India and the socialist countries of Eastern Europe, 1952-1953 to 1972-1973

(per cent per year)

Country	Annual compounded growth rate in exports from India		Annual compounded growth rate in imports to India	
	1952-53 to 1959-60	1960-61 to 1972-73	1952-53 to 1959-60	1960-61 to 1972-73
(1)	(2)	(3)	(4)	(5)
Bulgaria	16.03	14.24	16.98	12.39
Czechoslovakia	12.12	11.52	11.63	10.45
G.D.R.	18.63	11.24	15.28	11.43
Hungary	12.77	11.85	13.69	11.62
Poland	18.25	12.06	14.12	11.71
Romania	17.27	12.06	13.08	10.79
USSR	15.63	11.99	17.05	11.57

Source: Sunanda Sen, India's Bilateral Payments and Trade Agreements, 1947-48 to 1963-64 (Calcutta, Bookland, 1965) has tabulated official Indian data which was used for estimating growth rates for the period 1952-53 to 1959-60. Reserve Bank of India Bulletin, March 1974 was the data source for computing growth rates for the period 1960-61 to 1972-73.

E. POSSIBILITIES OF CO-OPERATION BETWEEN INDIA AND THE SOCIALIST COUNTRIES OF EASTERN EUROPE.

33. Table IX summarizes achievements with regard to Indian exports to the socialist countries of Eastern Europe and the rest of the world in 1972-1973 and the export targets for the total five-year period 1974-1979. The estimates show that efforts to enhance total Indian exports are expected to be concentrated on some traditional exports to the socialist countries, as well as in new directions. In the former category are included commodities such as iron ore and concentrates, cashew kernels, mica and footwear. The new emphasis includes the catch-all category "engineering goods", the details of which will be examined subsequently. New commodity groups in which major concentration of export effort is expected, in which at present the socialist countries of Eastern Europe do not figure in any significant sense, include marine products, coal, and chemical products (included in the "other" category, table IX). Since the lack of diversification of India's exports to the socialist countries of Eastern Europe has been examined earlier, a closer look at the rationale for such diversification, and policy approaches to it, may be in order.

34. As regards engineering products, it may be noted that such trade accounts for a very substantial part of the total trade turnover of the socialist countries of Eastern Europe. Trade in engineering products accounts for approximately a quarter to a half of the total exports and imports of major Eastern European economies, depending on their level of industrial development. 16/ Many of the socialist countries of Eastern Europe are now facing a shortage of semi-skilled and skilled labour, in the use of which relatively simple engineering products, both of the consumer goods and of the equipment variety, are fairly intensive. Several Indian economists have pointed to the possibility of expanded exports from India of such items. An example of existing opportunities for expanded Indian exports is the conventional medium-weight machine tool industry. For such machine tools foundry work, machining and assembly involve a substantial skilled and semi-skilled labour cost. The wage rate of an Indian machinist was found to be 6-10 per cent of the levels in developed economies. Even allowing for labour productivity differences, a conservative estimate of the Indian relative cost advantage, in terms of labour costs alone, was placed at about 20 per cent. Such cost advantages are considerably enhanced if scale economies on account of export are accounted for, as many Indian engineering industries are working at low capacity levels. 17/

16/ For a discussion of the estimates and the economic compulsions underlying them, see for example, O.T. Bogomolov and A.N. Bankovosky, "Economic Co-operation Among the Council for Mutual Economic Assistance Countries", Economic Bulletin for Asia and The Far East (Bangkok, ECAFE, December 1970), pp. 11-29.

17/ See Indian Institute of Management, Calcutta and M.N. Dastur & Co., Survey of India's Export Potential of Machine Tools (Delhi, Indian Institute of Foreign Trade, 1969) vol. I. pp. 160-168. Also see Yoginder K. Alagh, Machine Tool Models of Growth (Bangalore, Central Machine Tool Institute, 1974).

Table IX: India's export structure in 1972-1973 and Fifth Plan targets (1974-1979)

(In Rs. millions)

Commodity	Exports (1972-73) Soc.Coun. of Eastern Europe	Exports (1972-73) World total	Fifth Plan target World total (1974-1979)
Jute manufactures	673	2 500	12 000
Tea	382	1 473	8 400
Cotton textiles	438	1 735	11 550
Iron ore and concentrates	167	1 098	9 800
Cashew kernels	271	688	4 050
Tobacco, unmanufactured	303	611	3 350
Spices	108	291	1 700
Oilseeds, cake and meal	455	748	3 150
Coffee	152	329	1 900
Cotton, raw and waste	35	216	1 150
Mica	111	166	1 200
Engineering goods	189	1 387	15 000
Iron and steel	114	231	2 400
Leather	448	1 745	8 400
Coir yarn and manufactures	18	143	900
Footwear	51	126	1 050
Others	782	6 122	39 800
Total	4 697	19 609	125 800

Source: Reserve Bank of India Bulletin, op. cit., Statement 7, P.430, for East Europe estimates in 1972-73. Draft Fifth Five Year Plan, op.cit., pp. 78-80, for remaining estimates.

NOTE: The "others" category includes commodities which figure prominantly in India's foreign trade, but not in India's export trade with the socialist countries of Eastern Europe.

A recent study has estimated the skilled and semi-skilled labour costs (both direct and indirect) of commodities entering India's foreign trade and finds that the engineering import-substitution industries are skill-intentive. 18/ A number of these industries, such as selected conventional equipment industries, intermediates such as castings and forgings, and consumer goods of the metal products variety, are now being identified for export promotion purposes. It may be noted again that, while the general record of export expansion from India of such commodities has been good, the same has not been the case with exports to the socialist countries of Eastern Europe. The emphasis in the Eastern European economies on improvement of material standards of living, combined with labour scarcity, provides increasing scope for the export of processed consumer goods from India. The record of expansion of such exports from India in items such as footwear and clothing has already been noted. Scope for export of such items as consumer products from the engineering sector and agro-based and marine products also needs to be examined in detail.

35. There seems to be growing awareness of the need for increasing exports of commodities other than primary commodities from India to the socialist countries of Eastern Europe. In recent years, trade agreements between India and the socialist countries have ended with exhortations for the expension of such trade, while engineering goods and consumer goods have been listed in the schedule of items to be exported from India. 19/ Also, notably in the case of the Soviet Union, machinery and equipment manufactured at industrial enterprises built in India with the assistance of the USSR have been identified as another source of exports from India. Yet, as seen earlier, the success achieved in such exports has not been of a high order. A part of the difficulty in expanding Indian exports of machinery and equipment to the socialist countries, as also to other countries, is due to differences in the quality and specifications of Indian products. The exportable commodity usually must be adapted to the special requirements of the buyer as to specific technical characteristics, voltage differences, packing requirements, etc. In some cases, for example the export of railway wagons, Indian exporters have been successful in overcoming these problems, but considerable scope for improvement still exists. In addition, it would be beneficial to promote contacts and exchanges of information between Indian suppliers and the enterprises and foreign trade organizations in the socialist countries receiving Indian manufactured goods.

18/ R.J. Nambiar, "Factor Structure of India's Foreign Trade," Anvesak, Journal of the Sardar Patel Institute of Economic and Social Research, June 1972, pp. 82-89.

19/ Two official Indian periodical publications may be consulted for such evidence, (1) Indian Trade Journal and (2) India's Trade Agreements (both published by Ministry of Commerce, Government of India). References to such trade agreements exist in virtually every issue of these publications.

36. Another area of possible collaboration between India and the socialist countries of Eastern Europe which is increasingly mentioned of late is joint ventures in third countries. 20/ Since the proposals are at a formative stage at present, it is difficult to anticipate the exact projects that may be taken up. One area of possible co-operation between India and the socialist countries of Eastern Europe is in the developing African countries. 21/ There is in Africa a desire to increase the industrial base as part of the development process. Planners in African countries are conscious of Africa's industrial potential based on the domestic exploitation of rich natural resources. Considerable construction of economic overheads is also being undertaken in the process of development. Foreign exchange is available in varying degrees owing to reserves earned by the export of primary products. However, the African countries have been constrained by a lack of skilled personnel and of indigenous saving-investing entrepreneurial groups. Thus the state sector has had to play a significant role in the African development process. Certain aspects of the African development experience resemble the Indian experience; as in India, a policy of import substitution is being pursued in the initial phase of industrialization. The unit size of the African factories tends to be small and not much bigger than small-scale Indian factories. The immediate interest is to set up consumer-goods industries to produce products such as textiles, paper, electrical equipment and agricultural implements. These are precisely the areas of industrialization where Indian industry has acquired major experience in the last two decades, in terms of daily operation and also of supply of equipment and other inputs from within the economy. India can sell equipment for building up economic infrastructure such as railways, power equipment, and so on, and can share its own experiences in building up this structure at home. The sale of industrial equipment and machinery, however, requires technical collaboration and direct investment including the provision of machinery. The socialist countries of Eastern Europe, with their broader experience in industrialization, could complement the Indian contributions to the developing African nations. Many of the African Governments have welcomed investments in their industrialization schemes, often giving liberal tax concessions and special services to investors. Co-operation schemes between India and the socialist countries should take into consideration the desires of the African states to promote industrialization within their own borders, with a large participation and training of African workers.

20/ According to newspaper reports, such possibilities were discussed in both the Indo-Soviet Joint Commission Meetings in September 1974, and the Indo-Romanian trade discussion for 1974.

21/ The material on the development process in Africa has been gained in the author's visits to various African countries, and from the following sources:

(a) Kenya, Ministry of Economic Planning and Development, Statistical Division, Statistical Abstract, 1967

(b) Statistical Abstract, Survey of Industrial Production, 1963-1965.

(c) Nigeria, Federal Office of Statistics, Industrial Survey, 1963 and Preliminary Tabulations, 1964, 1965.

(d) Kenya, Development Plan, 1965-1970.

(e) Nigeria, Guideposts for Second National Development Plan, 1966.

37. There is also a potential for co-operation between India and the socialist countries of Eastern Europe in the oil-exporting developing countries. Again, India's recent development experiences in light industry and in the building of infrastructure could be combined with the advanced technological experience and techniques of the Eastern European socialist countries.

F. CONCLUSIONS

38. The role that imports from the socialist countries of Eastern Europe played in the Indian economy in the past has already been examined in some detail. This role may now be visualized in the context of India's future development. Imports in this context act as a catylictic agent in the growth process. They help in the realization of a rate and a pattern of economic activity which, in turn, is determined by specific development objectives. Fortunately, in the Indian case it is possible to examine this role of imports in a quantitative model of the economy already estimated by the planners for the period 1974-1979, which is the basis of India's current development efforts. 22/ Thus the role of imports from the Eastern European socialist countries and the rest of the world could be explicitly integrated into the Indian growth model and the model subsequently solved to draw inferences as to the nature and importance of such imports within the growth process. 23/ The objective of this process is an overall rate of growth of the economy and a pattern of growth which meets the objectives of reducing poverty and increasing self-reliance. The aggregate GDP target is derived from the growth objective; and, given an ICOR 24/ and the time required for investment to mature, the aggregate investment target in the terminal year can be derived. Consumption targets for a detailed 66 sector model were set in relation to the poverty removal objective. The aggregate investment target was disaggregated by 66 sectors and an exogenous aggregate export target was also thus disaggregated. (Micro-studies were used for justifying important targets of export expansion). Imports were built into the model through a 66 x 66 import coefficient matrix and vectors of import proportions out of final demand categories. The terminal year import coefficients were derived from the base year matrix, after explicitly allowing for import substitution possibilities based on technological information relating to domestic possibilities. Together with a vector of social consumption, stock requirements and an input coefficient matrix, the model was solved for output levels in the

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22/ Draft Fifth Five-Year Plan.

23/ For the justification of the superiority of such an approach, as compared to a traditional project-based approach, see J. Tinbergen, "International, National, Regional and Local Industries," in Essays in Honor of Gottfried Haberler, (Amsterdam, North-Holland Publishing Co., 1965); R. Caves, et. al., Trade, Growth and the Balance of Payments, pp. 116-125.

24/ ICOR = incremental capital-output ratio.

terminal year. The difference between aggregate imports and exports in the solution of the system, subtracted from aggregate investment requirements, gave the domestic aggregate savings required to be generated. 25/ Simulation of the model showed that variants allowing for greater reduction in inequality also led to more self-reliance, through reduced import requirements. Imports in this scheme of growth have two important functions. As an input, they are essential for the achievement of the rate and pattern of growth and thus are an instrument for achieving the growth and poverty-removal objectives. Second, reduction in the elements of the terminal year import coefficients and import proportions for final use, as compared to the base year magnitudes, are an indicator of the realizations of the only remaining objective - import - substitution. For the purpose of this study the plan model was solved to evaluate explicitly these two roles of imports from the socialist countries of Eastern Europe and the rest of the world. The results are presented in table X below. A glance at table X shows that, even if direct and indirect requirements of imports per unit of value-added generated domestically are expected to be met, to the extent of 20 per cent in the terminal year from the socialist countries, the specialization pattern of the socialist economies in India's developmental pattern is expected to continue as estimated for 1971-1972 and 1973-1974 (section D above). A detailed comparison of estimates in table X with estimates in table IV, however clearly shows that import substitution policies are dependent on sectors which are relatively intensive in imports from the Eastern European socialist economies. The only exception to this tendency is office and domestic equipment, where import substitution will affect imports from the rest of the world.

39. Recently India and the socialist countries of Eastern Europe have evolved the institutional mechanism of a Joint Commission for conduct of bilateral economic and scientific co-operation. The Joint Commission is generally headed on each side by a leader of Ministerial rank. Apart from trade discussion, problems of scientific and technical collaboration are discussed. Views are also exchanged on experience in planning. The Joint Commissions provide for a clearing house of views on problems of long-term economic, technical and scientific co-operation. Additional institutional and financial arrangements made recently within the framework of the CMEA, in particular by the International Bank for Economic Co-operation and the International Investment Bank, might further promote and strengthen the possibilities for intra-industrial specialization between India and the socialist countries of Eastern Europe. It has already been noted that economic relations between India and the socialist countries have reached a stage of maturity and significance such that problems of economic integration and individual commodity and project issues are viewed in a total framework of mutually beneficial economic integration. Indian exports in particular, as well as third country ventures, need to be looked at from this angle.

25/ For the specification of a broadly similar model for evaluating the role of foreign aid in the context of a national growth process see J.P, Pronk and E.J. Schreuel, "Some Reflections on the Effectiveness of Project Vs. Plan Aid," in H.C. Bos (Ed.), Op.cit., pp. 283-307. The Indian plan model approximates Model II of Pronk and Schreuel (Ibid., p. 295), with the difference that imports are endogenously estimated (exogenously in the Pronk-Schreuel model) and the investment vector is exogenously specified (endogenously in the Pronk-Schreuel model). Pronk and Schreuel have developed a model originally suggested by J. Tinbergen, see footnote 23.

Table X: Direct and indirect requirements of imports from the socialist countries of Eastern Europe and rest of the world per rupee of final demand for 66 sectors of the planning model: 1978-1979

(Direct and indirect imports per thousand rupees of final demand in India at 1971-1972 prices)

Planning Commission No. of Sector	Name of sector	Socialist countries of Eastern Europe	Rest of the world
(1)	(2)	(3)	(4)
1	Foodgrains	3.42	27.95
2	Other agriculture	1.45	5.48
3	Animal husbandry	0.74	5.68
4	Plantation	6.79	47.12
5	Forestry	0.09	1.57
6	Coal	0.70	18.13
7	Misc. coal and misc. petroleum products	0.61	13.81
8	Iron ore	0.04	31.88
9	Crude oil	0.25	4.57
10	Other minerals	0.54	28.52
11	Sugar and gur	0.95	9.12
12	Vegetable oils	2.99	49.04
13	Tea and coffee	3.33	28.68
14	Other food products	7.87	16.47
15	Cotton textiles	1.20	69.23
16	Jute textiles	0.71	10.93
17	Other textiles	4.23	67.07
18	Misc. textile products	0.84	14.32
19	Wood products	0.87	7.16
20	Paper and paper products	26.10	127.91
21	Leather and leather products	2.09	24.07
22	Rubber products	120.42	43.08
23	Fertilizers	16.64	312.25
24	Inorganic heavy chemicals	5.93	46.86
25	Organic heavy chemicals	6.94	61.36
26	Plastics	16.56	81.28
27	Cosmetics and drugs	112.83	204.76
28	Man-made fibres	13.76	100.01
29	Other chemicals	8.01	80.98
30	Petroleum products	236.92	426.20
31	Cement	0.58	18.73
32	Refractories	0.99	14.67
33	Other non-metallic mineral products	3.17	41.09
34	Iron and steel	2.37	29.23
35	Non-ferrous metals	6.40	170.48
36	Bolts and nuts	8.22	67.40
37	Metal containers	2.82	35.76
38	Other metal products	4.59	46.18

Table X (continued)

Planning Commission No. of Sector	Name of sector	Socialist countries of Eastern Europe	Rest of the world
(1)	(2)	(3)	(4)
39	Ball bearings	1.72	19.63
40	Office and domestic equipment	32.55	50.38
41	Agricultural equipment	86.71	938.13
42	Machine tools	58.53	115.14
43	Other machinery	272.41	351.80
44	Electric motors	25.93	88.92
45	Electric wires	21.30	214.30
46	Electronics	3.16	27.88
47	Batteries	10.70	72.81
48	Electrical household goods	3.56	61.04
49	Radio	9.98	88.17
50	Telephone and telegraph equipment	39.25	82.16
51	Other electricals	7.27	109.98
52	Motorcycles and bicycles	31.19	27.38
53	Motor vehicles	38.76	137.90
54	Ships and boats	39.11	117.79
55	Aircraft	107.44	121.35
56	Railway equipment	104.50	51.55
57	Other transport equipment	0.89	8.27
58	Watches and clocks	1.90	23.98
59	Misc. scientific instruments	111.15	274.98
60	Other industries	7.23	60.40
61	Printing	58.07	247.60
62	Electricity	0.54	8.76
63	Construction	90.63	15.27
64	Railways	0.51	7.50
65	Other transport	1.28	101.18
66	Other services	48.98	50.22

Note: See text for derivation of estimates. Data base in: Government of India, Planning Commission, A Technical Note on the Approach to the Fifth Plan of India (New Delhi, Planning Commission, 1973).